

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A process for producing an inorganic-inorganic composite material having a retentive pattern for use in the dental sector, comprising the steps of: in which
producing after shape-imparting processing and presintering of a powder containing oxide ceramic, an open-pore, crystalline oxide ceramic shaped part from a powder containing oxide ceramic after shape-imparting processing and presintering of the powder containing oxide ceramic is produced,
applying an infiltration substance, which consists of a precursor of a nonmetallic-inorganic phase, or an amorphous glass phase and a solvent, or of a hydrolysable compound of a metal, or contains an alkoxide of a metal, or a precursor of a silicate glass, in particular a hydrolysable silane, is applied to said
this shaped part at room temperature,
carrying out the penetration of the infiltration substance into the oxide ceramic body is carried out during an infiltration time of less than 10 minutes, and

sintering under an air atmosphere and at ambient pressure,
the oxide ceramic ~~is sintered~~ in a densifying manner under an air
atmosphere and at ambient pressure, to a theoretical density of
at least 99.5%, at a temperature of from 1000°C to 1600°C to form
the inorganic-inorganic composite material, and
etching the surface with an acid.

2. (Previously presented) The process as claimed in claim 1, wherein for the shape-imparting processing the powder containing oxide ceramic is provided with an organic binder and pressed.

3. (Currently amended) The process as claimed in claim 1, wherein the organic binder is an ~~ethylenic wax material,~~ in particular an ethylenic wax, a polyvinyl resin, a polyvinyl pyrrolidone, polyvinyl acetate, a polyvinyl butyral and/or cellulose.

4. (Previously presented) The process as claimed in claim 1, wherein the presintering takes place at a temperature of from 600 to 1300°C.

5. (Previously presented) The process as claimed in claim

1, wherein the infiltration substance is applied in vacuo.

6. (Previously presented) The process as claimed in claim 1, wherein penetration takes place at less than 40 mbar.

7. (Previously presented) The process as claimed in claim 4, wherein penetration takes place at 10 to 30 mbar.

8. (Previously presented) The process as claimed in claim 1, wherein the infiltration substance is applied in a layer thickness of from 2 to 90% of the thickness of the presintered open-pore crystalline oxide ceramic.

9. (Previously presented) The process as claimed in claim 8, wherein the layer thickness of the infiltration substance amounts to 2 to 30% of the thickness of the dense-sintered inorganic-inorganic composite material.

10. (Previously presented) The process as claimed in claim 9, wherein the layer thickness amounts to 5 to 20%.

11. (Previously presented) The process as claimed in claim 1, wherein for the dense-sintering the infiltration substance is

applied in a layer thickness of 5-90% of the thickness of the presintered oxide ceramic shaped part.

12. (Currently amended) The process as claimed in claim 11, wherein the infiltration substance ~~it~~ is applied in a layer thickness of from 10 to 90%.

13. (Previously presented) The process as claimed in claim 1, wherein the infiltration substance is applied in the presence of a solvent.

14. (Previously presented) The process as claimed in claim 13, wherein a polar or nonpolar solvent is used.

15. (Previously presented) The process as claimed in claim 13, wherein the solvent used is water or alcohol.

16. (Previously presented) The process as claimed in claim 1, wherein further external shaping of the composite material by material-removing machining takes place prior to the infiltration.

17. (Currently amended) The process as claimed in claim 1,

wherein the external shaping of the composite material by material-removing machining and/or etching takes place after the infiltration or after the full sintering, which takes place ~~in particular~~ at ambient pressure.

18. (Previously presented) The process as claimed in claim 1, wherein an adhesive agent is applied to at least sections of the surface of the composite material, and/or a further material is attached.

19. (Currently amended) The process as claimed in claim 1, wherein an at least one-layer coating is applied at least to sections of the surface of the composite material and is subjected to a further heat treatment ~~in particular~~ after it has been applied.

20. (Currently amended) The process as claimed in claim 1, wherein following the presintering ~~partial sintering~~ of the composite material with an oversize of 10 to 50%, a material-removing machining operation is carried out for the imparting of the shape.

21. (Previously presented) The process as claimed in claim

19, wherein the material-removing machining is carried out with an oversize of from 15 to 30%.

22. (Previously presented) The process as claimed in claim 1, wherein the powder containing oxide ceramic is processed to form an open-pore oxide ceramic shaped part in the form of a monolithic block or cylinder.

23. (Previously presented) The process as claimed in claim 22, wherein the monolithic block or cylinder undergoes chip-forming machining.

24. (Previously presented) The process as claimed in claim 23, wherein after the chip-forming machining the infiltration substance is applied in vacuo.

25. (Withdrawn) An inorganic-inorganic composite material, wherein it has a translucent inner region made from a crystalline oxide ceramic and a layer of an infiltration substance which at least partially surrounds or covers the inner region which contains the precursor of a nonmetallic-inorganic phase or of an amorphous glass phase or of a hydrolysable compound of a metal or of an alkoxide of a metal selected from the group of elements

consisting of Al, Ti, Zr or Si or contains a hydrolysable silane, and has a theoretical density of >99.5% and a biaxial strength of not less than 800 MPa and a fracture toughness of more than 6.5 MPa m^{1/2}.

26. (Withdrawn) The composite material as claimed in claim 25, wherein the open-pore, crystalline oxide ceramic contains zirconium oxide and additions of yttrium oxide.

27. (Withdrawn) The composite material as claimed in claim 25, wherein the zirconium oxide contains additions of from 2 to 4 mol%, in particular in the range from 2 to 10 mol% of yttrium oxide or of 2.5 to 15 mol% of cerium oxide or 2.5 to 5 mol% of erbium oxide or 2.5 to 5 mol% of scandium oxide or of 0.1 to 15 mol% of titanium dioxide or mixtures of two or more of the abovementioned oxides in the quantities indicated.

28. (Withdrawn) The composite material as claimed in claim 26, wherein the zirconium oxide contains additions of from 2 to 4 mol % of yttrium oxide.

29. (Withdrawn) The composite material as claimed in claim 25, wherein the open-pore, crystalline oxide ceramic contains

aluminum oxide and mixtures of further metal oxides and/or zirconium oxide, preferably tetragonal zirconium oxide.

30. (Withdrawn) The composite material as claimed in claim 25, wherein the precursor of the non-metallic-inorganic phase contains ionogenic or covalent compounds of the elements of groups Ia, IIa, IIIa, IVa, IIIb, IVb, Vb, VIb, VIIb, VIIIb, where a denotes the main groups and b the transition groups of the periodic system of the elements.

31. (Withdrawn) The composite material as claimed in claim 25, wherein the infiltration substance contains covalent bonds of Si and/or Zr.

32. (Withdrawn) The composite material as claimed in claim 25, wherein the infiltration substance contains ionogenic compounds, preferably Ce, Mn, V, Fe or mixtures of said elements.

33. (Withdrawn) The composite material as claimed in claim 25, wherein the amorphous glass phase is silicate glass, preferably an alkali-metal-free silicate glass.

34. (Withdrawn) The composite material as claimed in claim

25, wherein the infiltration substance contains tetraethyl orthosilicate as hydrolysable compound.

35. (Withdrawn) The composite material as claimed in claim 25, wherein the infiltration substance contains alkoxides of silicon or aluminum.

36. (Withdrawn) The composite material as claimed in claim 25, wherein the inner region is translucent and the layer of infiltration substance is cloudy-white.

37. (Withdrawn) The composite material as claimed in claim 25, wherein the inner region has a translucency which corresponds to that of hot isostatically pressed sintered ceramics.

38. (Withdrawn) The use of the crystalline, open-pore oxide ceramic and of the inorganic-inorganic composite material produced therefrom as claimed in claim 20 in the dental sector, preferably as a dental restoration, implant, implant part or orthodontic product.

39. (Withdrawn) The use as claimed in claim 38, wherein the dental restoration is a dental framework, a crown, a partial

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crown, a bridge, a cap, a shell, a veneer, an abutment or a post structure.